

Trend Study 2-17-01

Study site name: Meadowville.

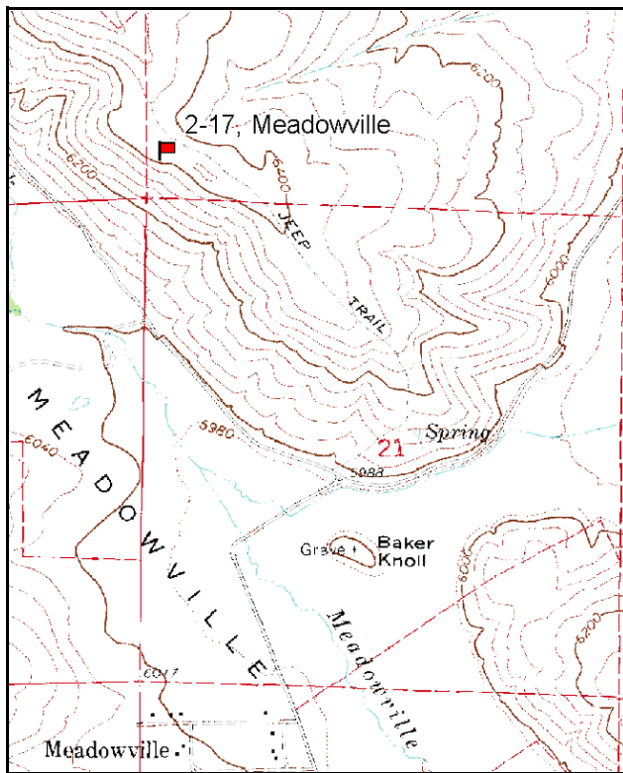
Vegetation type: Big Sagebrush.

Compass bearing: frequency baseline 161 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

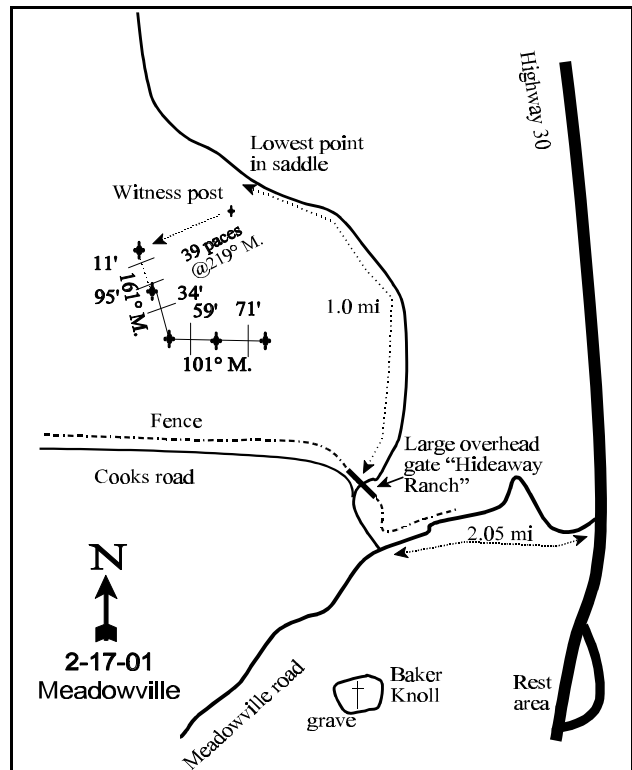
LOCATION DESCRIPTION

At the intersection of Highway 30 and Meadowville Road, turn west on Meadowville Road and proceed 2.05 miles. Turn right (north) onto Cook's Road and turn immediately right through a large gate marked "Hideaway Ranch". Proceed 1.1 miles, passing a spring on the right and following the ridgetop, to the witness post in the low spot of a small saddle. Walk 39 paces at 219 degrees magnetic from the witness post to the 0-foot baseline stake. The 0-foot stake of the baseline is marked by browse tag # 7939. The 0-foot stake is also approximately 75 yards from a fence to the west. The baseline runs 161 degrees magnetic. Line three and four dogleg and run parallel to the fence at a bearing of 101 degrees magnetic.



Map Name: Meadowville

Township 13N, Range 5E, Section 16



Diagrammatic Sketch

UTM 4634407 N, 466814 E

DISCUSSION

Trend Study No. 2-17

The Meadowville trend study is located on a moderately steep (35%), southwest-facing slope overlooking the north end of Meadowville Valley. The site is on private land and part of the Hideaway Ranch. Elevation is approximately 6,360 feet. The vegetation type is mountain big sagebrush/grass. The area is considered critical deer winter range. More specifically, the study area appears to be a "key" wintering site. Two winter killed deer carcasses and five shed antlers were found on the site in 1984. Pellet groups were also reported to be abundant in 1984 and 1990. Pellet group transect data taken on the site in 2001 estimated 56 deer and 3 elk days use/acre (139 ddu/ha and 7 edu/ha). Deer use appeared to be from late winter. This area is also grazed by cattle and possibly sheep. Cattle use was estimated at 4 days use/acre (9 cdu/ha) in 2001. Cattle were seen in the area while driving to the site, but cattle pats found on site appeared to be from the previous fall.

Soil is classified as "Solak Gravelly Loam", a shallow sandstone-limestone-quartzite conglomerate, where bedrock is normally found 10 to 20 inches below the surface. Solak soil is moderately permeable to water but runoff is rapid and the erosion hazard is high. The principal limiting factors are low available water capacity and a limited root zone (Campbell and Lacey 1982). The soil on the site has a clay loam texture with a neutral soil reaction (pH of 7.1). Effective rooting depth (see methods) was estimated at nearly 16 inches. Rock and pavement are fairly common on the surface and within the profile. Protective ground cover is abundant and the erosion condition class was determined to be stable in 2001.

Mountain big sagebrush and antelope bitterbrush are the key species on the site. The sagebrush population was heavily hedged in 1984 and moderately browsed between 1990 and 2001. The population has a distinctly decadent appearance with reduced vigor. Density of mature plants has remained stable since 1990, while the decadent component of the population is slowly dying out. Percent decadency has slowly declined from 100% in 1984 to 46% in 2001. Density of decadent plants has declined from 1,466 plants/acre to 240 plants/acre. Vigor was reported to be poor on nearly half (48%) of the population in 1984. It has continued to be high in 1996 (58%) and 2001 (42%). A sagebrush die-off is further illustrated by the abundant dead plants estimated in 1996 (1,160 plants/acre). Dead plants were not included in the 1984 and 1990 sampling. Reproduction in the form of seedlings and young is poor with only 20 young plants/acre estimated in 2001.

Additional forage is available from a few scattered antelope bitterbrush. These shrubs currently ('01) number only 200 plants/acre. They display moderate to heavy use but have normal vigor. Density of mature plants has remained stable since 1990.

The dominant shrub is the increaser, stickyleaf low rabbitbrush. It accounted for 36% of the shrub cover in 1996 and 32% in 2001. Density was estimated at about 1,900 plants/acre in 1996 and 2001. Mature plants average 1 foot in height with a crown of about 2 feet. Age class structure would indicate a stable population with 80% of the shrubs classified as mature. Broom snakeweed is also abundant but has declined from a high of 11,932 plants/acre in 1990 to 820 plants/acre in 2001. The current population is mostly mature and appears to be stable.

Perennial grasses are represented by moderate amounts of bluebunch wheatgrass and Indian ricegrass, followed by lesser amounts of Sandberg bluegrass. All of these showed evidence of light to moderate utilization by cattle in 1984. Annual cheatgrass was dominant in 1996. It provided 62% of the grass cover and 53% of the herbaceous cover, but has since declined significantly. Forb growth is sparse and generally low in stature. The most numerous perennial forbs are Utah milkvetch, arrowleaf balsamroot, thistle, wayside gromwell, and yellow salsify.

1984 APPARENT TREND ASSESSMENT

In spite of a soil that potentially is highly erodible, this site seems relatively stable. The current rate of erosion is slow but could easily become greater, especially if vegetation cover were to be seriously reduced. Vegetatively, there are some problems which may indicate a declining trend. Most significant is the decadent age structure of mountain big sagebrush and abundant broom snakeweed, an undesirable increaser. The principal causative factor is probably heavy game and livestock use and the associated trampling damage. This is a rather fragile, low potential site that requires more careful management to maintain a stable trend.

1990 TREND ASSESSMENT

As in 1984, there is still a high and increasing population of undesirable increasers and a high percentage of decadent plants in the sagebrush population. However, where all the sagebrush were classified as decadent in 1984, now 20% of the population consist of seedlings and young plants. Sagebrush canopy cover is estimated at 6%. The sagebrush population has declined by 34%. Bitterbrush has conversely increased it's numbers by 62%. Despite heavy grazing, total grass frequency increased largely due to significant increases in bluebunch wheatgrass and Sandberg bluegrass. Cover value for bare ground increased because of litter losses. This could change after we get through the drought and receive "normal" precipitation.

TREND ASSESSMENT

soil - slightly downward (2)

browse - slightly down but improved for bitterbrush (2)

herbaceous understory - slight increase due to grasses (4)

1996 TREND ASSESSMENT

Soil trend is up with an increase in litter cover and a decline in percent bare ground from 17% to 4%. Trend for the key browse species, mountain big sagebrush, is down. Utilization is heavier than in 1990, but only 28% of the plants sampled display heavy use. Reproduction is limited and the proportion of shrubs displaying poor vigor has increased from 28% to 58%. Decadence is still high at 60%, but similar to 1990 estimates. The downward trend does not appear to be use related. Undesirable increasers, stickyleaf low rabbitbrush and broom snakeweed, are numerous but do not appear to be increasing further. Trend for the herbaceous understory is stable. Sum of nested frequency of perennial grasses declined slightly while frequency of forbs increased.

TREND ASSESSMENT

soil - up (5)

browse - down (1)

herbaceous understory - stable (3)

2001 TREND ASSESSMENT

Trend for soil is down slightly due to an increase in bare ground and a decline in litter. Much of the change is due to the decline in frequency and cover of cheatgrass since 1996. As a result of the decline in vegetation and litter cover, the ratio of protective cover to bare ground declined 41%. There is some soil movement and pedestalling is apparent on the site, but overall, the erosion condition class was classified to be stable in 2001. Trend for browse is down due to a continual decline in sagebrush. The current population of just 520 plants/acre is moderately utilized and nearly half decadent (46%). In addition, 83% (199 plants/acre) of the decadent plants sampled were classified as dying. Since young recruitment is poor, there are not currently enough young plants to maintain the population. Mature sagebrush have poor leader growth, averaging only

1.2 inches in 2001. Density of the increaser, stickyleaf low rabbitbrush is stable at about 1,900 plants/acre while the density of broom snakeweed has declined. The small population of bitterbrush is stable with good vigor and no decadent plants. They appear to be better able to persist on this dry site than sagebrush. Utilization of bitterbrush was moderate to heavy but plants are healthy and vigorous and annual leader growth was estimated at 4.6 inches in 2001. Unfortunately bitterbrush is not abundant. Trend for the herbaceous understory is up slightly due primarily to an improvement in composition. Annual cheatgrass declined significantly in nested frequency and cover dropped from 20% to 7%. In addition, Sandberg bluegrass increased significantly. The most abundant perennial grasses, bluebunch wheatgrass and Indian ricegrass, remained stable. Forbs are diverse but not particularly abundant.

TREND ASSESSMENT

soil - down slightly (2)

browse - down (1)

herbaceous understory - up slightly (4)

HERBACEOUS TRENDS --

Herd unit 02 , Study no: 17

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Agropyron dasystachyum	5	-	-	-	2	-	-	-	-	-
G	Agropyron spicatum	_a 95	_b 120	_b 146	_b 156	42	53	58	58	6.50	7.13
G	Bromus tectorum (a)	-	-	_b 367	_a 294	-	-	98	91	19.65	6.85
G	Oryzopsis hymenoides	61	61	73	71	28	25	34	31	3.82	5.69
G	Poa pratensis	3	-	3	1	2	-	1	1	.03	.03
G	Poa secunda	_a 83	_b 152	_a 89	_b 138	31	63	38	61	1.50	1.41
G	Sitanion hystrix	5	3	4	-	3	1	1	-	.03	-
Total for Annual Grasses		0	0	367	294	0	0	98	91	19.65	6.85
Total for Perennial Grasses		252	336	315	366	108	142	132	151	11.90	14.27
Total for Grasses		252	336	682	660	108	142	230	242	31.56	21.13
F	Achillea millefolium	-	-	5	6	-	-	3	3	.04	.06
F	Agoseris glauca	-	4	-	-	-	3	-	-	-	-
F	Alyssum alyssoides (a)	-	-	292	293	-	-	88	94	2.44	2.25
F	Astragalus utahensis	_b 56	_{ab} 51	_{ab} 34	_a 17	30	22	19	10	.48	.17
F	Balsamorhiza sagittata	2	6	4	13	2	2	2	7	.39	.30
F	Castilleja chromosa	8	1	4	-	3	1	2	-	.01	-
F	Camelina microcarpa (a)	-	-	2	2	-	-	2	1	.01	.00
F	Chaenactis douglasii	1	8	5	-	1	4	3	-	.04	-
F	Cirsium undulatum	22	19	25	19	11	12	12	9	.39	.55
F	Collomia linearis (a)	-	-	-	10	-	-	-	4	-	.02
F	Comandra pallida	_{ab} 1	_a -	_a -	_b 10	1	-	-	5	-	.10
F	Collinsia parviflora (a)	-	-	_a 3	_b 9	-	-	1	4	.00	.04
F	Crepis acuminata	-	-	-	7	-	-	-	3	-	.21

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
F	Descurainia pinnata (a)	-	-	15	14	-	-	6	6	.03	.03
F	Draba spp. (a)	-	-	-	1	-	-	-	1	-	.00
F	Lactuca serriola	-	-	-	2	-	-	-	1	-	.00
F	Linum lewisii	_a -	_a -	_b 10	_{ab} 5	-	-	5	2	.02	.06
F	Lithospermum ruderales	11	16	22	22	5	8	12	12	1.00	1.33
F	Microsteris gracilis (a)	-	-	-	3	-	-	-	2	-	.03
F	Navarretia intertexta (a)	-	-	3	-	-	-	1	-	.00	-
F	Oenothera spp.	-	-	-	-	-	-	-	-	-	.00
F	Phlox hoodii	8	4	16	18	3	2	7	8	.16	.28
F	Phlox longifolia	_a -	_a 3	_a 11	_b 36	-	1	4	16	.02	.35
F	Polygonum douglasii (a)	-	-	3	3	-	-	1	1	.00	.00
F	Sisymbrium altissimum (a)	-	-	3	-	-	-	1	-	.03	-
F	Tragopogon dubius	_a 26	_a 19	_b 49	_{ab} 43	13	10	27	22	.54	.38
F	Unknown forb-perennial	-	3	-	-	-	2	-	-	-	-
Total for Annual Forbs		0	0	321	335	0	0	100	113	2.53	2.39
Total for Perennial Forbs		135	134	185	198	69	67	96	98	3.09	3.82
Total for Forbs		135	134	506	533	69	67	196	211	5.63	6.22

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 02 , Study no: 17

T y p e	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Amelanchier alnifolia	0	1	-	-
B	Artemisia tridentata vaseyana	35	18	4.47	2.40
B	Chrysothamnus viscidiflorus viscidiflorus	44	43	3.99	2.88
B	Eriogonum microthecum	3	1	.15	-
B	Gutierrezia sarothrae	24	20	.32	.36
B	Opuntia spp.	7	10	.27	.46
B	Purshia tridentata	9	9	1.14	1.93
B	Tetradymia canescens	21	18	.60	.97
Total for Browse		143	120	10.96	9.04

BASIC COVER --

Herd unit 02 , Study no: 17

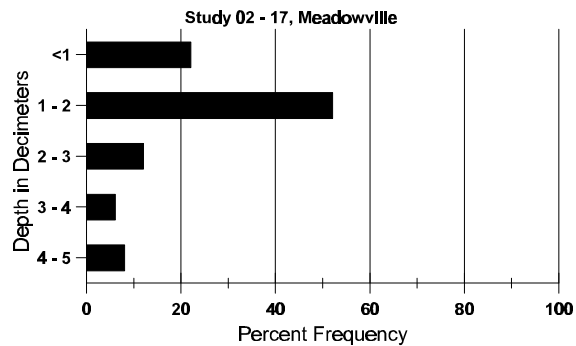
Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	388	385	2.50	11.50	53.66	41.42
Rock	210	194	10.00	9.00	10.95	8.15
Pavement	191	306	13.75	16.25	3.86	17.51
Litter	395	371	66.25	45.00	52.17	38.69
Cryptogams	32	6	.25	1.75	.09	.18
Bare Ground	133	211	7.25	16.50	4.17	10.99

SOIL ANALYSIS DATA --

Herd Unit 02, Study no: 17, Meadowville

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
15.7	59.8 (14.8)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 02 , Study no: 17

Type	Quadrat Frequency		Pellet Transect	
	'96	'01	Pellet Groups per Acre	Days Use per Acre (ha)
			01	01
Rabbit	3	2	52	N/A
Elk	7	4	35	3 (7)
Deer	15	25	731	56 (139)
Cattle	2	1	44	4 (9)

BROWSE CHARACTERISTICS --

Herd unit 02 , Study no: 17

Field unit 02 , Study no. 17																	
A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Amelanchier alnifolia																	
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20	17	19
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	90	-	-	1	-	-	-	-	-	-	1	-	-	-	33		1
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'84		00%			00%			00%									
'90		00%			100%			00%									
'96		00%			00%			00%									
'01		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)														'84	0	Dec:	0%
														'90	33		100%
														'96	0		0%
														'01	20		0%

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	3	-	-	-	-	-	-	-	-	3	-	-	-	100		3	
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	3	-	-	-	-	-	-	-	-	3	-	-	-	100		3	
	96	3	1	-	-	-	-	-	-	-	4	-	-	-	80		4	
	01	-	1	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	5	1	-	-	-	-	-	-	-	6	-	-	-	200	24	6	
	96	3	5	5	-	-	-	-	-	-	6	3	4	-	260	25	13	
	01	10	-	-	-	3	-	-	-	-	12	-	-	1	260	21	13	
D	84	-	4	40	-	-	-	-	-	-	23	-	20	1	1466		44	
	90	11	6	2	1	-	-	-	-	-	10	2	1	7	666		20	
	96	11	6	7	2	-	-	-	-	-	5	-	4	17	520		26	
	01	5	4	1	-	2	-	-	-	-	2	-	-	10	240		12	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	1160		58	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	820		41	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		09%			91%			48%			-34%							
'90		24%			07%			28%			-11%							
'96		28%			28%			58%			-40%							
'01		38%			04%			42%										
Total Plants/Acre (excluding Dead & Seedlings)														'84	1466	Dec:	100%	
														'90	966		69%	
														'96	860		60%	
														'01	520		46%	

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	84	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	01	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	84	6	-	-	-	-	-	-	-	-	6	-	-	-	200	9	11	
	90	4	-	-	-	-	-	-	-	-	4	-	-	-	133	10	10	
	96	84	-	-	6	-	-	-	-	-	90	-	-	-	1800	13	24	
	01	77	-	-	1	-	-	-	-	-	78	-	-	-	1560	11	20	
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	01	18	-	-	-	-	-	-	-	-	16	-	-	2	360		18	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			-43%							
'90		00%			00%			00%			+93%							
'96		00%			00%			00%			+ 3%							
'01		00%			00%			02%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	233	Dec:	0%			
												'90	133		0%			
												'96	1900		3%			
												'01	1960		18%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Eriogonum microthecum																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	96	4	-	-	-	-	-	-	-	-	-	-	-	-	80	12	11	
	01	1	-	-	-	-	-	-	-	-	-	-	-	-	20	14	17	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%			-80%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	100		-			
												'01	20		-			
Gutierrezia sarothrae																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	42	-	-	-	-	-	-	-	-	-	-	-	-	1400		42	
	96	6	-	-	-	-	-	-	-	-	-	-	-	-	120		6	
	01	2	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
Y	84	111	-	-	-	-	-	-	-	-	-	-	-	-	3700		111	
	90	272	6	-	-	-	-	-	-	-	-	-	-	-	9266		278	
	96	8	-	-	-	-	-	-	-	-	-	-	-	-	160		8	
	01	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
M	84	112	-	-	-	-	-	-	-	-	-	-	-	-	3733	7	11	
	90	72	-	-	-	-	-	-	-	-	-	-	-	-	2400	9	11	
	96	60	-	-	-	-	-	-	-	-	-	-	-	-	1200	7	10	
	01	40	-	-	-	-	-	-	-	-	-	-	-	-	800	5	8	
D	84	5	-	-	-	-	-	-	-	-	-	-	-	-	166		5	
	90	8	-	-	-	-	-	-	-	-	-	-	1	-	266		8	
	96	2	-	-	-	-	-	-	-	-	-	-	1	-	40		2	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+36%							
'90		02%			00%			.27%			-88%							
'96		00%			00%			01%			-41%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	7599	Dec:	2%			
												'90	11932		2%			
												'96	1400		3%			
												'01	820		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	4	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
	01	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	96	4	-	-	1	-	-	-	-	-	-	-	-	-	100	5	5	
	01	14	-	-	-	-	-	-	-	-	-	-	-	-	280	5	14	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%			+40%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	180		-			
												'01	300		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																		
Y	84	2	1	-	-	-	-	-	-	-	-	3	-	-	100		3	
	90	-	-	5	-	-	-	-	-	-	5	-	-	-	166		5	
	96	1	1	-	1	-	-	-	-	-	3	-	-	-	60		3	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	-	1	1	-	-	-	-	-	-	-	1	-	1	66	11	49	2
	90	1	1	3	1	-	-	-	-	-	6	-	-	-	200	13	21	6
	96	1	2	3	-	-	-	-	-	-	6	-	-	-	120	14	44	6
	01	-	5	5	-	-	-	-	-	-	10	-	-	-	200	21	48	10
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	2	-	-	-	-	-	-	-	2	-	-	-	66		2	
	96	-	-	-	-	-	1	-	-	-	-	-	-	1	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		40%			20%			20%			+62%							
'90		23%			62%			00%			-54%							
'96		30%			40%			10%			+ 0%							
'01		50%			50%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	166	Dec:	0%			
												'90	432		15%			
												'96	200		10%			
												'01	200		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Tetradymia canescens																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
	01	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	84	3	-	-	-	-	-	-	-	-	3	-	-	-	100	7 12	3	
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	66	8 15	2	
	96	16	3	2	1	-	-	-	-	-	22	-	-	-	440	11 17	22	
	01	33	-	-	-	-	-	-	-	-	33	-	-	-	660	9 14	33	
D	84	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	96	2	-	1	-	-	-	-	-	-	2	-	-	1	60		3	
	01	4	1	-	-	-	-	-	-	-	4	-	-	1	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			-26%							
'90		00%			00%			00%			+84%							
'96		10%			10%			03%			+27%							
'01		02%			00%			02%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	133	Dec:	25%			
												'90	99		33%			
												'96	600		10%			
												'01	820		12%			